U.S. Department of the Interior
Bureau of Land Management
GRAND JUNCTION Field Office
2815 H ROAD
GRAND JUNCTION, CO 81506

DOCUMENTATION OF LAND USE PLAN CONFORMANCE AND NEPA ADEQUACY

NUMBER: DOI-BLM-CO-2012-0016-DNA

CASEFILE/PROJECT NUMBER:

PROJECT NAME: 2012 Dolores River Riparian Restoration Project-North of Gateway BLM Lands

PLANNING UNIT: Gateway

LEGAL DESCRIPTION: The legal descriptions of the project are Township 51 N, Range 19W, Section 16. Township 15S, Range 104W, Sections 17, 18, 21, 27, 28, and 34, 6th Principle Meridian, Mesa, County, Colorado.; See attached maps.

APPLICANT: BLM

ISSUES AND CONCERNS: Several riparian systems in the Field Office, especially those at lower elevations, are occupied by invasive tamarisk and other noxious weeds. Tamarisk has displaced native woody species of cottonwood and willow and has formed dense monocultures in many areas. In addition to a loss of species diversity in both flora and fauna, tamarisk stands pose a fire hazard due to the high flammability of these plants. Historic fires in riparian areas have contributed to a decline in mature cottonwood galleries and an increase in noxious weeds. Tamarisk readily resprouts following fire. Tamarisk is a phreatophyte (water-loving) plant and has contributed to lower water tables in riparian systems and a subsequent loss of supporting native vegetation.

In 2005, in cooperation with USDA-APHIS and the Colorado Department of Agriculture, the BLM released the tamarisk leaf beetle at 5 locations within the Field Office. The tamarisk leaf beetle has significantly enhanced control when combined with mechanical and chemical methods by weakening tamarisk plants.

This project is one of many planned mechanical treatments in tamarisk-dominated riparian areas along the Dolores where machine access is feasible. Mechanical removal of weakened or dead tamarisk is one phase in the effort to restore riparian plant communities and lessen fire danger.

The excavator is chosen for its ability to surgically remove tamarisk with very little damage to desirable plants.

The machine is relatively light-weight (18,000-20,000 lbs.) and causes minimal ground disturbance. Turning is minimized to the extent possible, and most mulching occurs with the machine on top of previously mulched material when in heavy stands. Servicing (fueling) of the machine is by UTV with a mounted fuel tank.

Implementation is slated for the fall of 2012 beginning in early September, and may include winter months of 2012/2013 if weather conditions delay work. Operations would be suspended if conditions are too muddy and the machine is causing rutting of the site. Frozen ground is acceptable for operations.

The machine for this project is privately-owned and contracted through the Dolores River Restoration Partnership. BLM weed management personnel will provide the on-the-ground oversight for the partnership.

The primary objectives of mechanical treatment are to:

- Remove 100% of the tamarisk overstory by mulching. A coarse mulch is desired to allow native vegetation to penetrate the mulch, and follow-up knapweed herbicide to reach the ground. Large diameter tamarisk are pulled over by the excavator arm, severed at the stump, and mulched on the ground leaving the largest part of the bole intact. Small diameter tamarisk is mulched top to bottom.

- Avoid native shrubs as much as possible to provide a future seed source, and to allow release of the plant following tamarisk removal.

-Open the tamarisk canopy to allow access to Russian knapweed and other undesirable weeds.

<u>General Information on Follow-up Treatments</u>

All of the mechanically treated units will be followed up with a basal bark herbicide application on the resprouts one year after mulching. The year-long lag allows time for all of the plants that are still alive following mulching to send up new shoots. Some of the tamarisk, especially larger trees away from the river, will not resprout and will not require follow-up.

Most of the units have a knapweed component to them. The exact acreage is unknown since an accurate inventory would be extremely difficult to obtain. Crews methodically move through the units treating patches they find. The individual unit maps identify knapweed treatments as part of the overall regime. For analysis purposes, if a unit is identified for knapweed treatments, one could assume the whole unit will be treated even though that may not be the case on the ground.

The shapefile is called: DRRP_All-Project-Polygons

Note: When this shapefile was made, some herbicide information was added to the attribute table which has changed since it was created (we have learned a few things). The document listed above in the shared drive is up-to-date.

LAND USE PLAN (LUP) CONFORMANCE REVIEW: The proposed action is subject to the following plan:

Name of Plan: GRAND JUNCTION Resource Management Plan

Date Approved: JANUARY, 1987

____ The Proposed Action is in conformance with the RMP because it is specifically provided for in the following LUP decision(s):

Decision Language:

__X__ The Proposed Action is in conformance with the RMP, even though it is not specifically provided for, because it is clearly consistent with the following LUP decisions (objectives, terms, and conditions):

Wildlife Management, pg 2-14: "To maintain existing riparian acreage and manage for the greatest diversity in plant heights and for the species appropriate (native) for the site".

General Natural Resource Management, Recreation, pg 2-51: "Manage the Dolores River Canyon to protect recreation use (primarily for floatboating, highway oriented sightseeing, and hiking) and protection of natural values".

REVIEW OF EXISTING NEPA DOCUMENTS:

List by name and date all existing NEPA documents that cover the Proposed Action.

Name of Document: CO-130-2010-031-EA Integrated Weed Management Plan and EA, which addressed mechanical treatments of tamarisk.

Date Approved: December 20th, 2010

List by name and date any other documentation relevant to the Proposed Action (e.g., biological assessment, biological opinion, watershed assessment, allotment evaluation, and monitoring report).

Name of Document:

6. Are the cumulative impacts that would result from implementation of the Proposed Action unchanged from those analyzed in the existing NEPA document(s)? Yes

   Documentation of answer and explanation: This action combined with other actions in the area as stated in the above referenced EA would improve the health of riparian systems. As identified in the EA the treatments for fuel reduction would also reduce the fire danger and subsequent chance for an unwanted fire in a riparian system.

7. Is the public involvement and interagency review associated with the existing NEPA document(s) adequate for the Proposed Action? Yes

   Documentation of answer and explanation: The Integrated Weed Management EA was open for public review and received no comments. Numerous publications and natural resource agencies were consulted in the creation of the Integrated EA.

INTERDISCIPLINARY REVIEW: Identify those team members conducting or participating in the NEPA analysis and preparation of this work sheet (by name and title).

Name	Title	Review Completed
Jim Dollerschell	Range Mgt Specialist	3/15/12
Heidi Plank	Wildlife Biologist	3/1/12
Alissa Leavitt-Reynolds	Archaeologist	3/5/12
Christina Stark	Riparian	
Nathan Dieterich	Hydrologist	2/8/12
Alan Kraus	Hazmat Coordinator	1/12/2012
Anna Lincoln	Ecologist	2/8/12
Robin Lacy	Realty Specialist	3/5/12

REMARKS:

Cultural Resources:
The proposed action, with the exception of the cottonwood galleries and along the ditch, is in a depositional environment where the natural ground disturbance from annual flooding and bioturbation from the riparian area has modified the surface so extensively that the likelihood of finding cultural resources is negligible. Cultural resource surveys will occur in only the areas where there is a greater likelihood of cultural resources being found (a total of approximately 50 acres). If significant cultural resources or historic properties are located in these inventories, the project will be redesigned to avoid the sites. This decision is in compliance with the evaluation required by the National Historic Preservation Act, 36 CFR 800, Colorado BLM's Protocol with the State Historic Preservation Office, and the Colorado BLM Handbook for Cultural Resources (Chap. 3, p. 22). The following stipulations would protect any unknown significant cultural resources that may be present in the APE:

chemical treatments so that chemically treated plants won't be ingested or utilized. The GJFO weed program is targeting species which are not native to North America, and it is a SOP to apply a visible dye on every herbicide application. These two practices should adequately address tribal concerns.

Environmental Consequences/Mitigation: None: The Ute have a generalized concept of spiritual significance that is not easily transferred to Western models or definitions. As such the BLM recognizes that they have identified sites that are of concern because of their association with Ute occupation of the area as part of their traditional lands. No further Native American Indian consultation was conducted for the undertaking. The project would not alter or limit any access if there were traditional uses that are not known to the agency.

Special Status Species:

Plants: A review of BLM and Colorado Natural Heritage Program (CNHP) records indicate that no Threatened or Endangered plants are known to occur in the project area; however 5 BLM Special Status plant Species do occur in the Gateway area: Dolores River skeletonplant, osterhout's cryptantha, Tufted frasera, Horseshoe milkvetch, and Eastwood's monkeyflower. The proposed project is not expected to have any effect on the monkeyflower, as this species is limited to hanging gardens in steep canyon walls. While direct impacts to the four remaining species are not expected from the treatment itself, parking and project area access could be a threat. Potential impacts include crushing by work vehicles or the track excavator while gaining access to the project area, trampling by the weeds management personnel, or herbicide drift. In general the treatment areas do not provide suitable habitat for the Dolores River skeletonplant, Osterhout's cryptantha, Tufted frasera, or Horseshoe milkvetch, as they are dominated by tamarisk, knapweed, and other weedy species, which typically exclude native species. To minimize impacts to the rare plants parking, staging, and access routes should be limited to degraded areas, avoiding areas dominated by native vegetation, and the guidelines in the GJFO Integrated Weeds Management Plan will be followed. Spot surveys may be needed to ensure avoidance of rare plants, but could be completed in-house and coordinated with the weeds specialist during project implementation.

Terrestrial and aquatic wildlife:
Several special status wildlife species potentially to occur in or near the project area; no threatened, endangered or candidate species are present. Potential habitat for Yellow-billed Cuckoo does exist in the river corridor below Gateway, however this habitat will not be treated. Treatment and removal of tamarisk is intended to restore cottonwood-willow habitat favorable to the cuckoo. Species that have some potential to be affected by the proposed action include three BLM-sensitive fish species (roundtail chub, flannelmouth sucker, and bluehead sucker), nesting peregrine falcons, golden eagles, bald eagles, numerous migratory birds, and wintering mule deer.

A review of the CNHP and BLM records show several raptor nesting sites mapped within 0.5 mile of sites OP 19, OP 20, OP 22.5, CC-BLM-01, and CC-BLM-02. Potential nest sites for

Other aquatic species such as northern leopard frog and Great Basin spadefoot may be present as well. Individuals may be impacted by bank disturbance, however given the small percentage of the availably habitat impacted these losses are not expected to negatively impact the population as a whole. Breeding activities of these species occur in the spring and summer and thus would not be directly impacted by the proposed action.

The equipment being used allows for limited damage to soils and the stream bank by selectively removing undesirable woody plant species while leaving desirable native vegetation in place. Slash and mulch from the treatment will be left as ground cover and will help to maintain streamside stability. Equipment and vehicles will be operated at times when soil conditions are dry or frozen to minimize impacts to the soil, which will minimize damage to the stream bank and issues related to erosion and siltation.

Water quality (Surface and Groundwater): *Surface water:* The proposed action is situated within water quality stream segment 2 of the Lower Dolores River Basin. Stream segment 2 of the Lower Dolores River Basin is defined as "Mainstem of the Dolores River from the Little Gypsum Valley Bridge at the San Miguel/Montrose County line, to the Colorado/Utah border". Water quality stream segment 2 is not classified as "Use Protected" thus the Antidegradation Rule is applicable. For this reach, minimum standards for physical and biological, inorganics and metals are listed in Table 1 (CDPHE-WQCC. 2010a).

Table 1: Numeric Standards for water quality stream segment 2.

Stream Segment	Classifications	Numeric Standards					
		Physical and Biological	Inorganic (mg/l)		Metals (ug/l)		
COGULD02	Aq Life Warm 1 Recreation E Agriculture	D.O.=5.0 mg/l pH=6.5-9.0 E.Coli=126/100ml	NH_3(ac/ch)=TVS Cl_2(ac)=0.019 Cl_2(ch)=0.011 CN=.005	S=0.002 B=0.75 NO_2=0.5 NO_3=100	As(ac)=340 As(ch)=7.6(Trec) Cd(ac/ch)=TVS CrIII(ac)=TVS CrVI(ac/ch)=TVS Cu(ac/ch)=TVS	Fe(ch)= 1000(Trec) Pb(ac/ch)=TVS Mn(ac/ch)=TVS Hg(ch)=0.01(tot) Ni(ac/ch)=TVS	Se(ac/ch)=TVS Ag(ac)=TVS Ag(ch)=TVS U(ac/ch)=TVS Zn(ac/ch)=TVS

CDPHE–WQCC. 2010a

The CDPHE —Integrated Water Quality Monitoring and Assessment Report-2010 update to the 2008 305(b) Report (CDPHE-WQCC. 2010c) was reviewed to determine the current status of assessment and determination of water quality within the proposed project area. The Colorado Integrated Reporting Category (IR) value assigned to affected portions of segment 2 in the —Status of Water Quality in Colorado – 2010 document was IR=5. Stream segment 2 was identified as fully supporting agriculture and primary contact recreation. However, segment 2 is not supporting aquatic life warm 1 due to elevated levels of iron from unknown sources. In Colorado, the majority of the assessed surface water bodies fall into IR Categories 1, 2, and 3. Category 1 indicates waters attaining water quality standards. Colorado has elected to place segments where not all uses have been assessed in IR Category 2. In some cases, a complete assessment of all uses cannot be completed do to the lack of data, but the data that is available indicates that at least some of the uses that were assessed are fully supporting. IR Category 3 indicates that insufficient data is available to determine whether or not the classified uses are

Treatment with chemicals would follow SOPs and mitigation/conservation measures outlined in DOI-BLM-CO-130-2010-0031-EA (Appendices E and F). These measures would minimize the possibility of accidental contamination of water bodies and groundwater by herbicides due to runoff, drift, misapplication/spills, and leaching. The aquatic labeled herbicides would not impact water quality if used according to label rates of application.

If any riparian areas do become denuded as an inadvertent result of nearby weed treatment, these sites would be potential candidates for restoration. Any additional disturbance related to restoration would be minor compared with the benefits of a more rapid reestablishment of vegetation cover.

Groundwater: A review of the USGS Groundwater Atlas of the Colorado indicates the proposed project to be situated within the boundaries of the Dolores River alluvial aquifer system (Topper et. al. 2003). The primary source of groundwater near in the project area is contained within shallow, localized, alluvial/colluvial deposits adjacent to the Dolores River and its major tributaries (e.g. West Creek). Alluvial ground water, although relatively insignificant in terms of total volume withdrawn (surface water is primary source), is important for irrigation, public and domestic water supply, and livestock uses (Topper et al., 2003).

A summary of the hydraulic characteristics and water quality for the Dolores River Alluvial Aquifer is displayed in the table below.

	Dolores River Basin
Aquifer characteristics	Quaternary gravel, sand, silts, clay, and various mixtures.
Primary uses	Domestic, with agricultural use in Mesa and Montrose Counties
Water levels	2-90 feet; some springs
Well data	100 completed wells 90% <120 feet mean depth = 66 feet
Yield	0-200 gpm 90% yield <50 gpm mean = 22 gpm
Water quality	Marginal. Total dissolved solids (TDS) averaged 770 mg/L for the Dolores alluvium.

Table data from Topper et al., 2003.

Groundwater in the GJFO is currently being managed primarily under guidance from CDPHE's Water Quality Control Regulations 41 and 42 (CDPHE-WQCC. 2009b). Numerical standards are shown in Appendix H (DOI-BLM-CO-130-2010-0031-EA).

The proposed action is not anticipated to affect any bedrock aquifers in the planning area. Usability of groundwater derived from bedrock sources is extremely limited due to poor water quality and discontinuous nature of potentially usable water bearing units. Furthermore, development of bedrock aquifer systems in the planning area is often cost prohibitive given necessary water treatment and construction/development of wells.

The project is focused within the riparian areas along the Dolores River. Assessments of the condition of the Dolores River were completed in 1993 and 2010. The stream reaches that were assessed in 2010 were found to be type C and C-5 depending on the substrate type. This type of channel does have moderate sinuosity which causes for bank erosion on the outside corners. Primary riparian vegetation includes inland saltgrass (*Distichlis stricta*), tamarisk (*Tamarix ramosissima*), coyote willow (*Salix exigua*) and other willows, wild privet (*Foresteria pubescens*), Boxelder (*Acer negundo*), skunkbush (*Rhus trilobata*), Russian Knapweed (*Centurea repens*), Russian olive (*Elaeagnus angustifolia*) and several sedge and rush species (*Carex spp.* and *Juncus spp.*), Reed grasses, and scattered Fremont and narrow leaf cottonwoods (*Populus Fremontii* and *angustifolia*). Cottonwood galleries within the project area are sparse but present. There is some regeneration within these stands. The river receives frequent flooding during spring runoff.

Human impacts within close proximity to the project area include Colorado Highway 141, power and telephone lines, and private ranches. Colorado Highway 141 runs parallel to the Dolores River. The proximity of the road to the river varies. Within the project area the buffer between the river and road ranges from 100 to 800 feet. The Dolores River is considered to be in Properly Functioning Condition within the reaches assessed on public land in the project area.

Removal of tamarisk, Russian knapweed, and other invasive species would allow the riparian system to return to a more natural condition. The removal of tamarisk may allow the water table to slightly rise, which would better enable cottonwoods, willows, and other native phreatophytes to become established. Phreatophytes are "water loving" plants that need to be rooted below the water table or saturated zone in the soil. Once native plants are established the water table would likely return to its current level. The establishment of native riparian vegetation throughout the project area would be dependent on a variety of factors such as the level of the water table, the proximity of a seed source, disturbance regimes, frequency of flooding, and soil chemistry. Tamarisk alters the soil salinity in areas that they occupy which can have a negative impact on the establishment, vigor, and survival of native riparian vegetation. Over time the removal of tamarisk from the riparian area would allow the soil chemistry to change back to a more natural condition.

Some native vegetation would be impacted during tamarisk and Russian knapweed removal, but these impacts would be limited and controlled. Identification and marking or wrapping of cottonwoods and other native species prior to tamarisk removal would provide extra protection to these plants. The tracked excavator proposed for use on this project has the ability to selectively remove vegetation. Any direct impacts to native riparian vegetation would be limited and short-term. Removal of tamarisk and Russian knapweed would increase the amount of light, nutrients, and water available to native vegetation which would increase establishment and survival rates.

Willow pole plantings that are proposed along stretches of the project area would greatly expedite the establishment of these species, and increase the local seed source. Planting of experimental cottonwood pole plantings may also enhance the local riparian ecosystem if soils and available water support their establishment and survival. The project would lead to an

Environment - Water Quality Control Commission. Amended: February 8, 2010 Effective June 30, 2010.

CDPHE-WQCC. 2010c. "Integrated Water Quality Monitoring and Assessment Report-State of Colorado" The Update to the 2008 305(b) Report," Colorado Department of Public Health and Environment -Water Quality Control Commission, Effective April 30, 2010.

Topper, R., K.L. Spray, W. H. Bellis, J.L. Hamilton, and P.E. Barkmann. 2003. Ground Water Atlas of Colorado. Colo. Geol. Surv. Special Pub. 53.

Rosgen, Dave. 1996. Applied River Morphology. Wildland Hydrology, Pagosa Springs, Colorado: 5-21 pp.

Stream Stats: http://water.usgs.gov/osw/streamstats/index.html Accessed April 2011.

COMPLIANCE PLAN (optional):

NAME OF PREPARER: Sparky Taber

NAME OF ENVIRONMENTAL COORDINATOR: Collin Ewing

DATE: 4/30/12

Appendix A

Mitigation Measures

- Operate equipment and vehicles only when soil conditions are dry enough or frozen to minimize impacts to soil and watershed resources.
- Equipment must be power-washed or comparable cleaning, to ensure than noxious weed seeds are removed from any and all equipment and vehicles used on the project prior to entering the project area.
- Avoid the introduction of hazardous materials into the environment by preventing on-site fuel or oil release. Fueling and maintenance activities should not take place in or adjacent to any drainage, all product containers must be removed from the project area 52.236-10 which includes but is not limited to inspection of equipment for leaks, measures to avoid fuel releases and spill containment pits for tanks greater than 200 gallons which are reclaimed and re-contoured upon job completion, and failure to contain requires immediate reporting, documentation and cleanup in accordance with State and Federal Law and Policy.
- Inadvertent Discovery: The NHPA, as amended, requires that if newly discovered historic or archaeological materials or other cultural resources are identified during the Proposed Action implementation, work in that area must stop and the BLM Authorized Officer (AO) must be notified immediately. Within five working days the AO will determine the actions that will likely have to be completed before the site can be used (assuming in place preservation is not necessary) (36 CFR 800.13).
- The Native American Graves Protection and Repatriation Act (NAGPRA) requires that if inadvertent discovery of Native American Remains or Objects occurs, any activity must cease in the area of discovery, a reasonable effort made to protect the item(s) discovered, and immediate notice be made to the BLM Authorized Officer, as well as the appropriate Native American group(s) (IV.C.2). Notice may be followed by a 30-day delay (NAGPRA Section 3(d)).
- A standard Education/Discovery stipulation for cultural resource protection should be attached to the Decision Record. The BLM project proponent is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts.
- Strict adherence to the confidentiality of information concerning the nature and location of archeological resources would be required of the BLM project proponent and all of their subcontractors (Archaeological Resource Protection Act, 16 U.S.C. 470hh).

Riparian Restoration Plan

for BLM Lands

North of Gateway

Dolores River Restoration Partnership

Prepared by

Sparky Taber

Grand Junction BLM

- Biological control of tamarisk is providing a boost in reducing the competition of this weed. Historic treatments by the office on the Colorado river prove that removal of the tamarisk/knapweed overstory provides a release for native plants. Some sites on the Dolores will respond to weed removal (without re-seeding) better than others-a few treatments (with monitoring) will help us gauge what needs reseeding and what sites won't. Treatments of tamarisk and Russian knapweed will at least give us the opportunity to set the successional clock back to an earlier seral stage.
- Cottonwood protection: Mature cottonwoods are highly susceptible to fire. Although fire has been rare along the Dolores, recreational use is on the rise, and much of that is associated with the bigger galleries north of Gateway. Removing the tamarisk associated with these stands will help prevent catastrophic fires in the galleries. Once mature cottonwoods are lost, there is little chance of cottonwood re-establishment in the absence of flooding.

General Social Goals (reasons for restoration efforts)

- Highway 141 is a scenic byway, and part of the scenery is the Dolores river. Several miles of the river are behind a veil of tamarisk. Removing the tamarisk, either mechanically or manually will open the visual corridor to the river.
- Several of the sites north of Gateway are active campsites with abundant tamarisk and Russian knapweed. Treating the sites will improve aesthetic values as well as reduce the spread of knapweed.

Overall Partnership Objective

The overall vegetative objective for treatment areas regardless of treatment type is a percent cover of exotic species below 15%.

Logistical Considerations

The entire corridor has vehicle access to at least one side of the river, with both sides being accessible north of Gateway. Access will play a big role in determining active (mechanical or manual) treatments of tamarisk and Russian knapweed. In general terms, most of the east side (of the river) south of Salt Creek will receive passive (biological agent) treatments of tamarisk. The near future holds promise for biological treatment of Russian knapweed, and the east side will be an ideal place for this type of knapweed treatment, given access issues.

Sites north of Gateway will be a combination of mechanical and manual treatments of tamarisk, followed by Russian knapweed and secondary weed treatments. Some knapweed treatments may occur before or during tamarisk treatments depending on the density of tamarisk stands.

need a spring planting of desirable grasses with good seedling vigor. Seedbed prep is a light disking by an ATV-pulled disc, and seed covering is by ATV-pulled cultipacker.

Mechanical estimate: 3 days --Fall '12

Knapweed estimate 3 days—Fall '12

Knapweed herbicide: Transline—Fall '12

Basal Bark resprout treatment, 2 days-- Fall '13

Secondary weed treatments, 2 days—Spring'13

Secondary herbicide, TBD

Seed species, TBD (a mix of cool and warm season grasses)

Seeding (broadcast): 1 day—Spring '13

ATV Disking, 2 days—Spring '13

ATV Cultipack, 2 days—Spring'13

Site 144-RL, DR Map #36, 10 acres

Site 144 is a popular campsite under large cottonwoods at river's edge. Several cottonwoods are north of the campsite. A wall of tamarisk hides the river, and is mixed in the cottonwoods. Russian knapweed is under most of the polygon. Hydrologic connectivity is good as evidenced by scattered phragmites throughout the site. Native grasses and shrubs vary in density, but represent the whole site. Additional tall-pot planting of cottonwoods is a possibility. Treatment method is mechanical with excavator-mounted head to select the tamarisk and some of the native shrubs which are a fire threat to cottonwoods. Southern end of site suitable for manual treatments of tamarisk, cut-stump treatment, combined with mulching of slash. Knapweed treatments follow once site is opened up.

Mechanical estimate: 3 days—Fall '12

Basal Bark treatment, 1 day--Fall '13

Knapweed treatments, 3 days—Fall '12 or'13

Knapweed herbicide: Transline or Redeem R&P

Manual estimate (Corps), 2 days Fall '12

Cut-stump herbicide: Garlon 3 or 4 + crop oil

Site 149-RL 17.7 acres

This long narrow band of riparian area extends from private lands to the Utah border (Stateline Rapid) on the west side of the river. It is characterized by ephemeral outwash areas and willow thickets. There are isolated tamarisk plants scattered along the reach. The unit is suitable for manual treatment by the Corps crew with cut-stump herbicide treatments. Scattered knapweed infestations no doubt occupy the site, but exact locations are unknown. Accessible by OHV application equipment.

Manual estimate (Corps): 1 day $1,500---Fall '12

Cut-stump herbicide: Garlon 3 or 4 + crop oil

Site-by-Site Descriptions-North of Gateway, East Side of River

Site 143a-RR 1.75 acres

This site is suitable for mechanical tamarisk removal and basal bark spraying of resprouts. Unit is located immediately adjacent to county road and river. Machine will occupy county road while treatments occur, therefore traffic control will be needed. Steep bank unsuitable for manual treatments.

Mechanical estimate: ½ day, ---Fall '12

Basal bark treatment, 1/2 day Fall '13

Site 144, 145a-RR, 8.8 acres in 2 units

Site 144-RR is suitable for manual treatments of tamarisk with cut-stump application of herbicide. Lop-and-scatter slash treatment. Knapweed acres unknown, but will assume at least ½ acre is infested. Knapweed to be treated with Redeem R&P herbicide early to mid-summer.

Site 145a contains two cottonwood galleries and is a combination of manual and mechanical treatments. Manual work will concentrate on scattered and isolated tamarisk and cut-stump herbicide treatment. Excavator treatments will concentrate on denser stands and the heavy

These sites represent mixed-age cottonwood galleries on two sites that typically flood at high water or by flash flooding. There are pole-cottonwood harvest opportunities, the only suitable site on BLM. The gallery site is suitable for manual treatments of isolated tamarisk, and mechanical is appropriate for dense stands. Dense vegetation will hinder production rate. The slough is treatable by excavator if water level is low and the ground is dry enough to cross the high water channel. The slough and gallery areas are designated as basal bark for resprouts. Knapweed is abundant but full extent unknown until tamarisk removed. Wrapping of select cottonwoods to protect from beaver activity is part of the overall treatment regime.

Mechanical estimate: 5 days ---Fall '12

Manual estimate (tamarisk removal + wrapping): 2 days ---Fall '12

Knapweed estimate 2 days ---Summer '12

Knapweed estimate 2 days—Fall '13

Knapweed herbicide (Transline) ----Fall '13

Knapweed herbicide (Redeem R&P)---Summer '12

Basal Bark estimate: 2 days ---Fall '13

Site 146 island, 3.2 acres

This site is immediately adjacent to Site 146 (slough), and may be accessible by machine if water levels are low enough in the fall. The treatment prescription is to mechanically treat tamarisk and followed by bio control on the resprouts. Potential crossing is at the southeastern edge of the island.

Mechanical estimate: 3 days ---Fall '12

Site 146 Ditch-RR, 10.3 acres

This site is suitable for manual treatment of small tamarisk along the ditch to the private border. Slash treatment is lop-and-scatter away from the ditch. Herbicide treatment is cut-stump with Garlon 4 and crop oil. The Russian knapweed treatment is TBD.

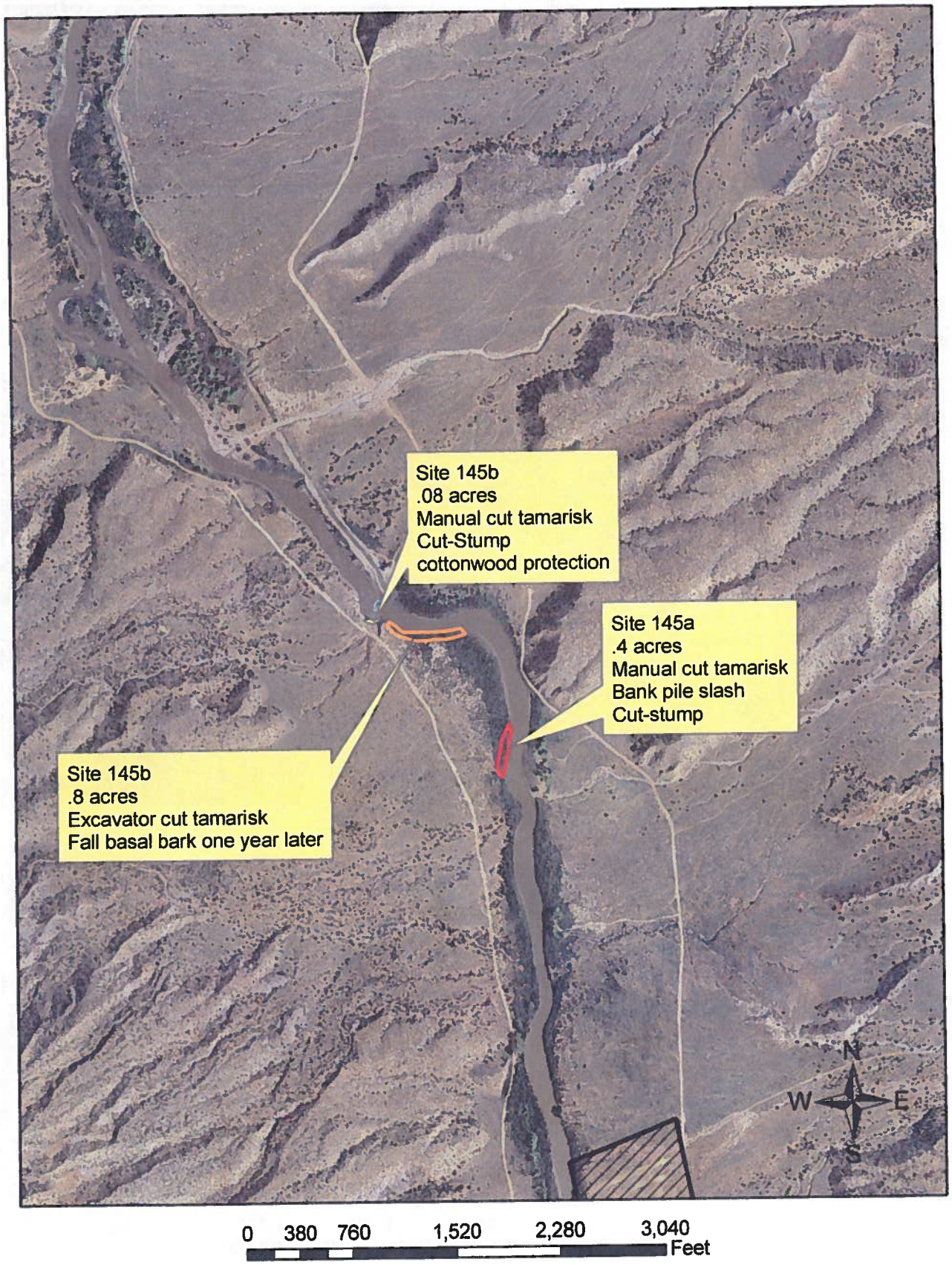
Manual estimate: 2 days ---Fall '12

Site 146 North-RR , 2 units for 38 acres

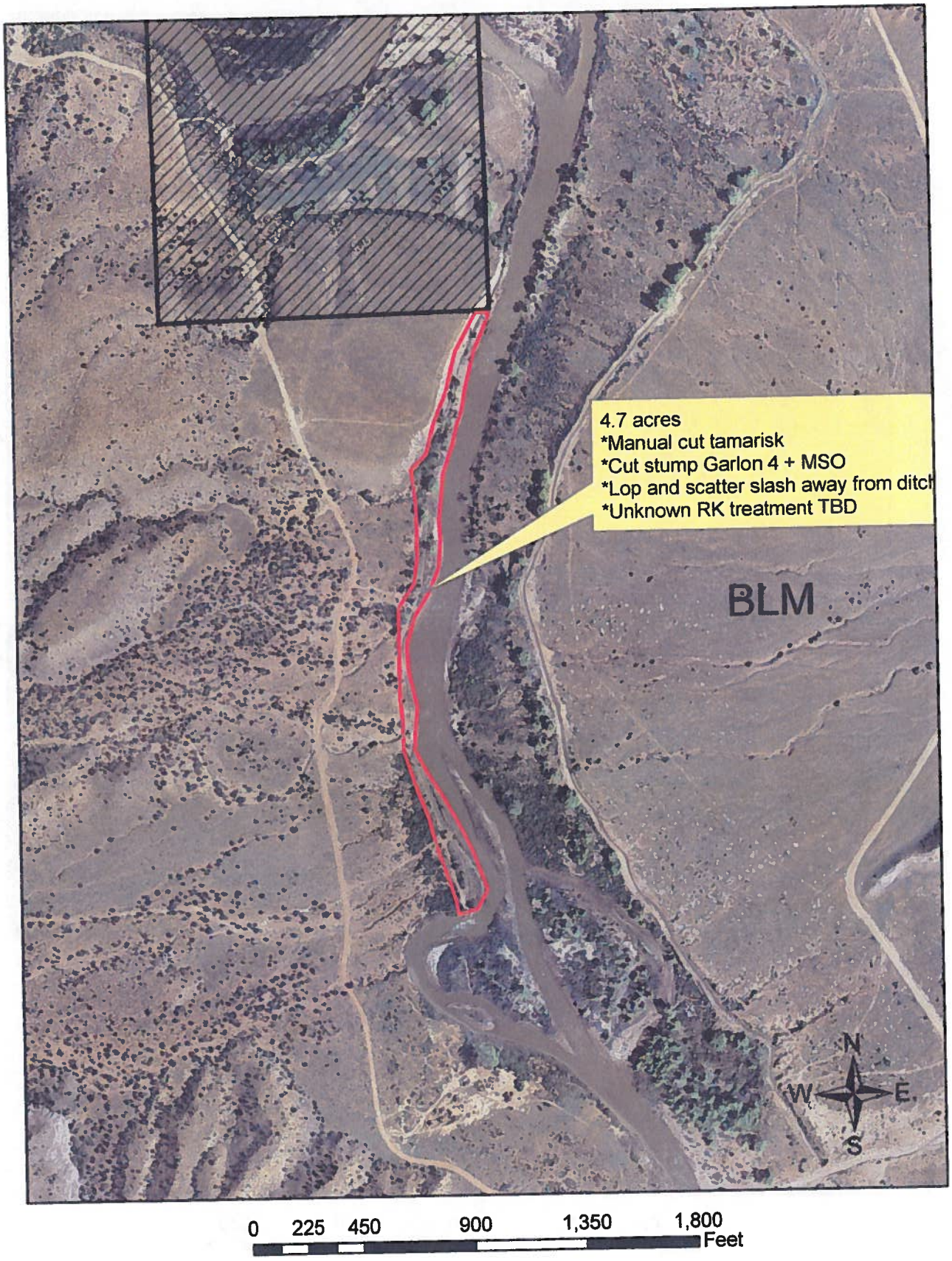
Site 142a-RL


PRIVATE
Site 142a
20.5 acres
*Excavator cut tamarisk
*disk and cultipack seed
*RK treatment fall following tamarisk removal
*Transline 14-16 oz/ac for RK
N
W
E
S
0 375 750 1,500 2,250 3,000
Feet

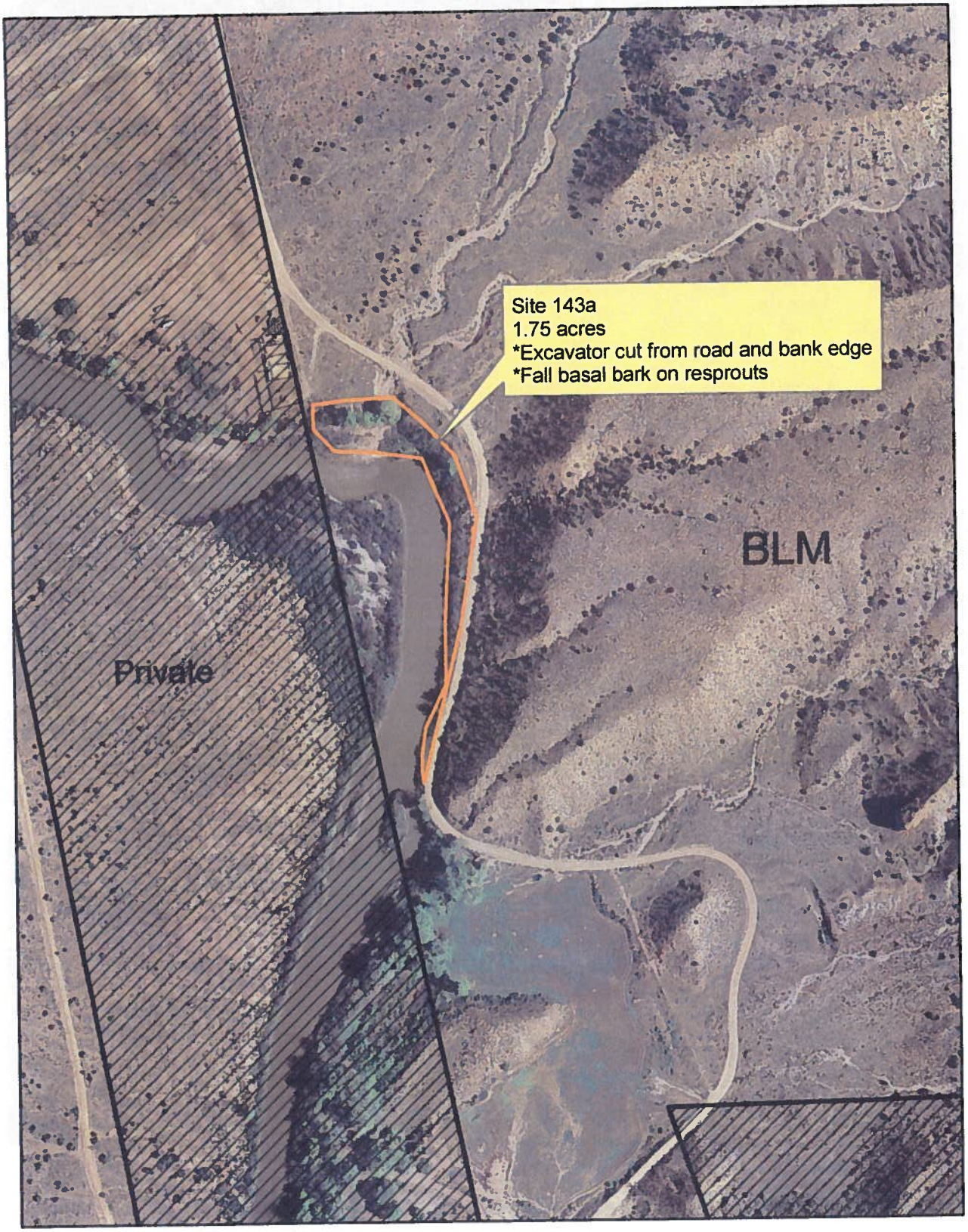
Site 145a, 145b-RL



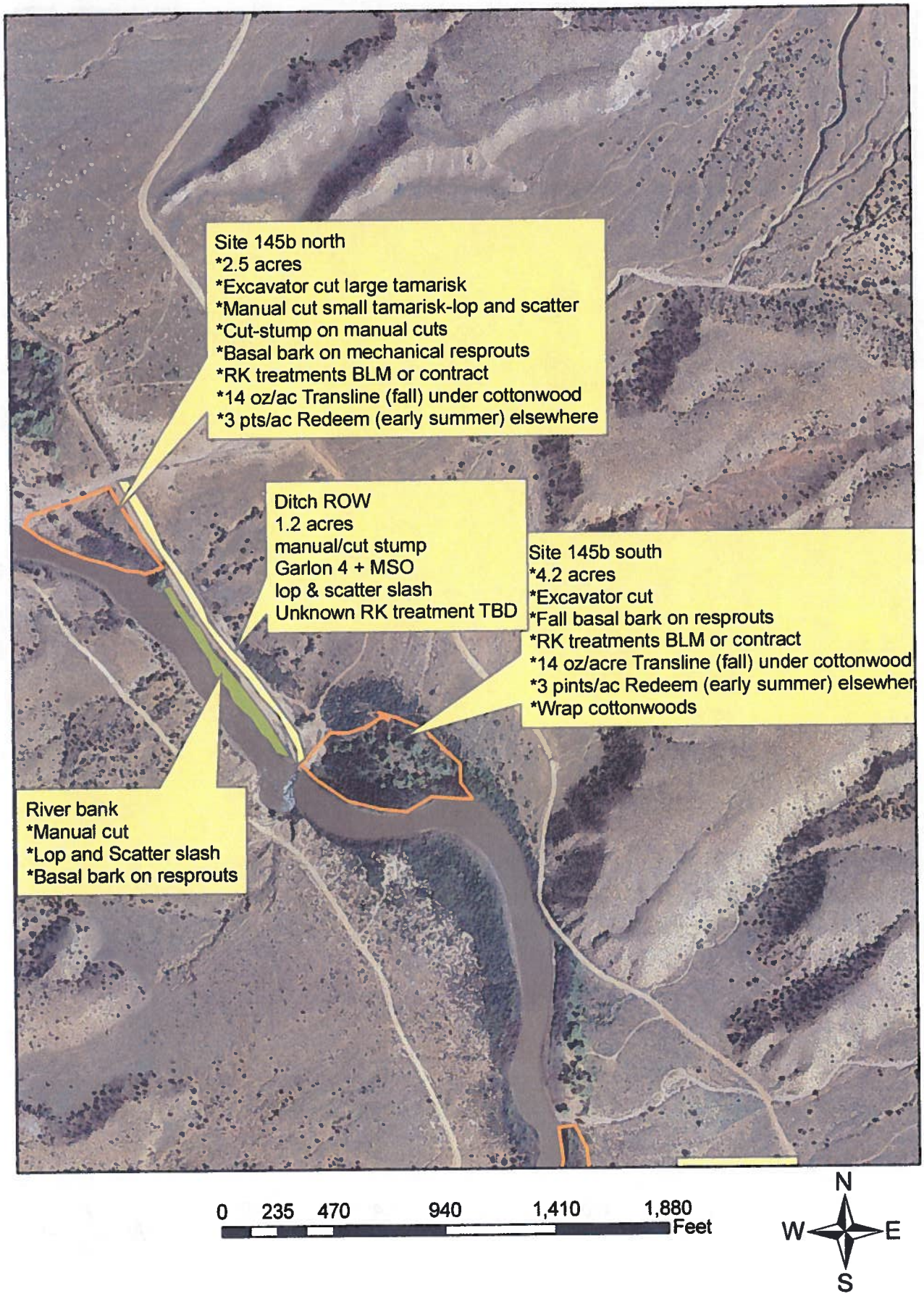
Site 146 North-RL



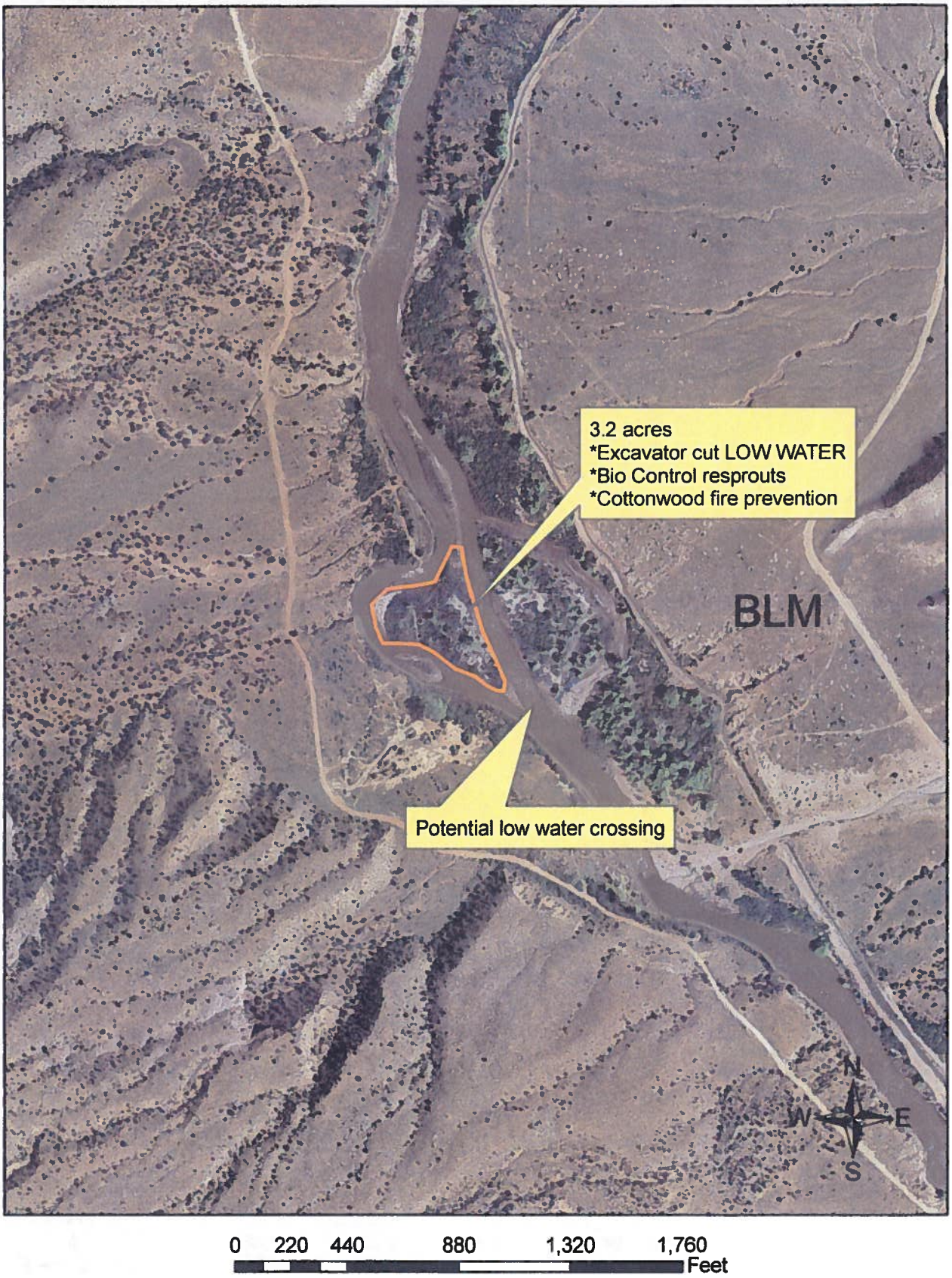
Site 143a-RR


Site 143a
1.75 acres
*Excavator cut from road and bank edge
*Fall basal bark on resprouts
BLM
Private

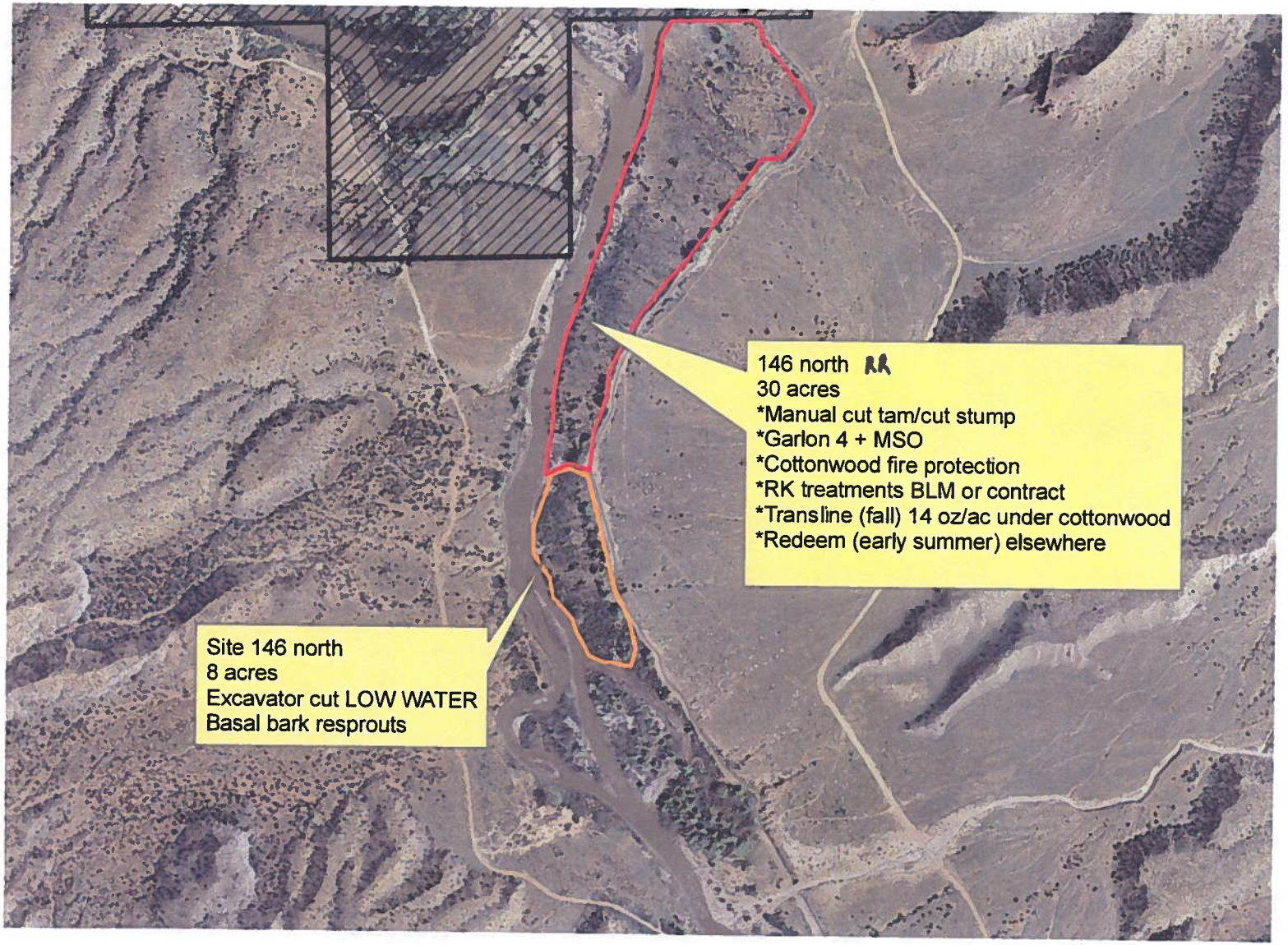
Site 145b-RR


Site 145b north
*2.5 acres
*Excavator cut large tamarisk
*Manual cut small tamarisk-lop and scatter
*Cut-stump on manual cuts
*Basal bark on mechanical resprouts
*RK treatments BLM or contract
*14 oz/ac Transline (fall) under cottonwood
*3 pts/ac Redeem (early summer) elsewhere
Ditch ROW
1.2 acres
manual/cut stump
Garlon 4 + MSO
lop & scatter slash
Unknown RK treatment TBD
Site 145b south
*4.2 acres
*Excavator cut
*Fall basal bark on resprouts
*RK treatments BLM or contract
*14 oz/acre Transline (fall) under cottonwood
*3 pints/ac Redeem (early summer) elsewher
*Wrap cottonwoods
River bank
*Manual cut
*Lop and Scatter slash
*Basal bark on resprouts
0 235 470 940 1,410 1,880
Feet
N
W
E
S

Site 146 island



146 NORTH - RR


146 north RR
30 acres
*Manual cut tam/cut stump
*Garlon 4 + MSO
*Cottonwood fire protection
*RK treatments BLM or contract
*Transline (fall) 14 oz/ac under cottonwood
*Redeem (early summer) elsewhere
Site 146 north
8 acres
Excavator cut LOW WATER
Basal bark resprouts